experiment—The relativistic conception of space and time—Lorentz transformation and its consequences—(a) Lorentz contraction; (b) Einstein time (c) Einstein's velocity addition theorem; (d) Doppler Effect; and (e) Abersation dilatation; Variation of mass and the principle of the intertia of energy—Relativistic Lagrangian and relativistic Hamiltonian—four vectors.

7 *Wave Machanics.*—Wave corpuscle parallelism and its extension to matter—Interference and diffraction of cathode rays—Experiments of Davisson and Germer and of G.P. Thomson—Wave velocity and group velocity—Heisenberg's Principle of uncertainty and the role of the observer—Reflection and transmission phenomena—The Wave equation of Schroginger and its application to (*a*) a linear oscillator, (*b*) a rigid rotator, (*c*) a plane rotator.

Chemical Physics.

The Gaseous State.—Densities of gases, and vapours—molecular weight—dissociation.

The Liquid state.—Solution, osmotic pressure, lowering of vapour pressure, elevation of boiling point and depression of the freezing point due to the presence of dissolved substances, dissociation and association of dissolved substances.

The Collodal State.—Sols, gels and emulsions. Molecular kinetic behaviour of dissolved substances—the ultracentrifuge. Optical properties of Colloids.

Molecular State of Matter.—Evidence of molecular reality. Number, mass and size of molecules. Molecular form, elements of stereochemistry, structure of simple carbon compounds. Electron diffraction and molecular structure.

Applications of Thermodynomics.—Heat of reaction, Hess's law, Kirchoff's law. Free energy, Gibbs—Helmholtz relation. Thermodynamic potential. Homogeneous equilibria, the reaction isotherm, the reaction isobar and the reaction isochore. Mass law Heterogeneous equilibria. The Distribution law, partition coefficients and their applications.

Thermodynamics of non-ideal solutions, activity. The Phase rule and its applications.

The Third law of Thermodynamics, its application to condensed and uncondensed systems. The chemical constant, sackur—Tetrode formula. Thermal Ionisation Theory.

Reaction Kinetics.—Reaction rates and their theory.

The Solid State.—Amorphous solids and crystals; elements of crystal symmetry, crystal systems, Miller indices, Zones, Zone oxes, goniometry, stereographic projection. Point groups. Space lattices, space groups. Diffraction of X-rays by crystals, the Bragg spectrometer. Crystal structure by the Bragg and the Laue methods. Principles of the other methods of crystal analysis.

Electrochemistry.—Electrolysis, the Faraday. Arrhenious theory, migration of ions, transport numbers. Conductivity of electrolytes. Ostwald's dilution law, osmotic pressure of electrolytes, Strong electrolytes, Interionic attraction theory of electrolytic conduction. Applications of conductivity methods. The activity concept, its interpretation on the basis of the interionic attraction theory. Ionic equilibria. E.M.F. of reversible cells, electrode potentials, Concentration cells, Primary and Secondary cells. Application of E.M.F. measurements-hydrogen ion activity and H, solubility of sparingly soluble salts, transport numbers, potentio metric t'tractions.

Nature of the Chemical Bond.—Valence, modern theories.

Dielectric constant.—Claussins-Mosotti and Debye Equations-Dipole-moments and their determinations. Dipolemoments and physical properties, Applications to determine structure of molecules and intra molecular rotation.

Light Scattering and Raman Effect.—

Molecular Magnetism and its Chemical Significance.

Faraday Rotation.—Verdet constant. Application to determine molecular structure.

Books for Study and Reference

1 Poynting and Thomson—Properties of Matter (Revised Edition).
2 Newman and Searle General Properties of Matter
3 A Wood—Acoustics
4 A.B. Wood—Theory of Sound
5 Lamb—Dynamical Theory of Sound
6 Roberts—Heat and Thermodynamics
7 Saha and Srivastava—Text-book of Heat
8 Jenkins and White—Physical optics
9 Drude Optics
10 Williams—Interperometry
11 Wood—Physical Optics
12 Max Born—Optik
13 Preston—Theory of Light
14 White—Atomic Spectra
15 Ruark and Urey—Atoms, Molecules and Quanta
16 Thomson—Chemical Spectroscopy
17 Sommerfeld—Atomic Structure and Spectral lines
18 Page and Adams—Principles of Electricity
19 Harnwell—Principles of Electricity and Electromagnetism.
20 Richtmyer and Kennard—Introduction to Modern Physics.
21 Hoag and Komff—Modern Physics
22 Jauncey—Modern Physics
23 Max Born—Atomic Physics
24 Joos—Theoretical Physics
25 Frenkel—Wave Mechanics (Elementary Theory)
26 Sommerfeld—Wave Mechanics
27 Eddington—Mathematical Theons of relativity
28 Pauling and Wilson—Quantum Mechanics
29 Planck—Mechanics of deformable bodies
30 Weatherburn—Advanced Vector Analysis
31 Glasstone—Treatise on Physical Chemistry
32 Do —Recent advances in Physical Chemistry
33 Fermi—Thermodynamics
34 Falkenragen—Electrolytes
35 Slater—Reaction Kinetics
36 Glasstone—Electrolytes
37 Pauling—Nature of the Chemical Bond
38 Smythe—Dielectic Constants
39 Clark—Applied X-rays

(*Letter No. E.* 611, *dated* 18*th April* 1952, *from the Education Secretary to Government, Bangalore. The revised syllabus will come into effect from the First Honours Class from June* 1953).

By Order,
C. RANGACHAR,
Registrar.

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OFFICE OF THE PRINCIPAL, GOVERNMENT AYURVEDIC AND UNANI COLLEGE, MYSORE.

Notification.

Following is the list of Register Numbers of successful candidates of the Supplementary Board Examination of the College held in October 1952 :—

Ayurvedic Section.

I YEAR.

Second Class.—1, 3, 4, 6, 7, 9, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24 and 25.

II YEAR.

Second Class.—26, 27, 29, 31, 32, 33 and 34.

III YEAR.

Second Class.—35.

IV YEAR.

Second Class.—38, 39 and 40.

Result of 40 (A) withheld.

Unani Section.

I YEAR.

Second Class.—41.

II YEAR.

Second Class.—42.

IV YEAR.

Result of 44 withheld.

C. DWARAKANATH,
Principal.